CLAIMS

1. A liquid powered illuminescent device, comprising:

a housing configured to be connected to a liquid supply, said housing having an inlet port and a discharge port arranged at opposite ends of said housing and having a linear passageway extending along a straight path entirely through said housing from said inlet port to said discharge port, said linear passageway being configured to convey liquid from said inlet port to said discharge port;

a power generator located in said linear passageway and configured to convert energy from liquid flowing through said linear passageway into electric power; and

a light source mounted on said housing and driven by said power generator.

2. The device of claim 1, wherein said inlet and discharge ports and said linear passageway are centered about a common axis, said linear passageway having a uniform constant diameter along an entire length thereof.

3. The device of claim 1, wherein said linear passageway is tubularly shaped and centered about a linear longitudinal axis extending along a center of said housing.

4. The device of claim 1, further comprising a light ring mounted to one end of said housing and surrounding one of said inlet and discharge ports, said light ring constituting said light source.

5. The device of claim 1, wherein said light source includes at least one of a light emitting diode and an electroluminescent film.

6. The device of claim 1, wherein said light source includes a plurality of light emitting diodes arranged in a concentric circle about one of said inlet and discharge ports.

7. The device of claim 1, further comprising:

a ring shaped bracket mounted to one end of said housing, said ring shaped bracket defining a circumferential chamber; and

a printed circuit board mounted in said circumferential chamber and connected to said light source, said printed circuit board being arranged concentric with said linear passageway.

8. The device of claim 1, wherein said light source includes light emitting diodes arranged in a circle concentric with said linear passageway.

9. The device of claim 1, further comprising a nozzle pivotally attached to one of said inlet and discharge ports.

10. The device of claim 1, further comprising an impeller being configured to be rotatably driven by liquid flowing through said linear passageway.

11. The device of claim 1, further comprising fins mounted to said housing and suspending said power generator in a center of said linear passageway.

12. The device of claim 1, wherein said power generator includes magnets and a coil centered about a fluid axis of said linear passageway, said magnets being adapted to be rotated about said fluid axis in response to fluid flow through said linear passageway.

13. The device of claim 1, wherein said linear passageway extends through an interior of said generator.

14. The device of claim 1, wherein said power generator including magnets and a coil arranged concentric with one another, said linear passageway extending through an interior of at least one of said coil and magnets.

15. The device of claim 1, wherein said power generator includes magnets and a coil aligned end to end, one of said magnets and coil being rotatable, said power generator further including angled tabs having one end extending along an end of said

coil and having an opposite end extending along a side of at least one of said coil and said magnets, said angled tabs electromagnetically coupling said magnets to said coil.

16. A self powered light comprising:

a housing configured to be connected to a liquid supply, said housing having an inlet port and a discharge port arranged at opposite ends thereof and having a passageway interconnecting said inlet and discharge ports, said housing being aligned along a longitudinal axis;

a power generator located in said passageway and configured to convert liquid flowing through said passageway into electric power; and

a plurality of light emitting diodes arranged in a ring concentrically about one of said inlet and discharge ports.

17. The self powered light of claim 16, further comprising a circular bracket mounted to one end of said housing, said circular bracket defining a chamber extending about a circumference of, and arranged concentric with one of said inlet and discharge ports, and a printed circuit board located in said chamber and operatively connected to said light emitting diodes.

18. The self powered light of claim 16, further comprising a printed circuit board hermetically sealed within said housing, said printed circuit board being electrically connected to said light emitted diodes.

19. The self powered light of claim 16, further comprising a ring shaped printed circuit board hermetically sealed within said housing, said printed circuit board having said light emitted diodes mounted thereto and electrically communicating with said power generator.

20. The self powered light of claim 16, wherein said passageway is linear to define a straight path extending entirely through said housing from said inlet port to said discharge port, said passageway being configured to convey liquid from said inlet to said discharge port.

21. The self powered light of claim 16, wherein said inlet and discharge ports and said passageway are centered about a common linear axis extending entirely through said housing.

22. The self powered light of claim 16, wherein said passageway is tubularly shaped with a uniform diameter centered about a longitudinal axis extending entirely through said housing.

23. A hydroelectric generator for driving low power electrical components, comprising:

a housing configured to be connected to a water supply, said housing having an inlet port and a discharge port arranged at opposite ends thereof, said housing having a linear passageway extending along a straight path entirely through said housing from said inlet port to said discharge port, said linear passageway being configured to convey water from said inlet port to said discharge port;

a power generator mounted in said linear passageway and configured to convert energy from water flowing through said linear passageway into electric power, said generator including magnets and a coil centered about an axis of said linear passageway, at least one of said coil and magnets being adapted to be rotated relative to said housing and about said axis in response to a water flow through said linear passageway; and

an electric output from said power generator delivering electrical power to a low power electrical component operatively connected to said power generator.

24. The hydroelectric generator of claim 23, wherein said electrical component includes light emitting diodes arranged in a circle concentric with said linear passageway.

25. The hydroelectric generator of claim 23, further comprising a light ring mounted to one end of said housing and surrounding one of said inlet and discharge ports, said light ring including a plurality of light emitted diodes powered by said power generator.

26. The hydroelectric generator of claim 23, further comprising a plurality of light emitting diodes arranged in a ring about one of said inlet and discharge ports.

27. The hydroelectric generator of claim 23, further comprising a ring shaped printed circuit board mounted in said housing and arranged concentrically with said linear passageway, said printed circuit board being configured to support electrical components driven by said power generator.

28. The hydroelectric generator of claim 23, wherein said linear passageway extends through an interior of said magnets and coil.

29. The hydroelectric generator of claim 23, wherein said magnets and coil are aligned end to end, one of said magnets and coil being rotatable, said power generator further including tabs extending along an end of said coil and along sides of at least one of said coil and magnets, said tabs electromagnetically coupling said magnets to said coil.

30. The hydroelectric generator of claim 23, wherein said linear passageway extends about a perimeter of said power generator.